

REMARKS

The Non-final Office Action mailed December 11, 2007, has been received and reviewed. Each of claims 1-20 stand rejected. Claims 1, 4-5, 8-12, 17 and 20 have been amended herein. Support for the amendments may be found in the Specification, for instance, at ¶¶ [0053], [0058], [0059], [0061], and FIG. 11. It is respectfully submitted that no new matter has been added. Reconsideration of the above-identified application in view of the above amendments and the following remarks is respectfully requested.

Examiner Interview

Applicants wish to thank Examiner Dinh for granting the telephonic interview on March 4th, 2008. The lateral movement of the rotatable member was discussed.

Rejections based on 35 U.S.C. § 103

Title 35 U.S.C. § 103(a) declares, a patent shall not issue when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” The Supreme Court in *Graham v. John Deere* counseled that an obviousness determination is made by identifying: the scope and content of the prior art; the level of ordinary skill in the prior art; the differences between the claimed invention and prior art references; and secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

To support a finding of obviousness, the initial burden is on the Office to apply the framework outlined in *Graham* and to provide some reason, or suggestion or motivation found either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the prior art reference or to combine prior art reference

teachings to produce the claimed invention. See, *Application of Bergel*, 292 F. 2d 955, 956-957 (1961). Thus, in order “[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success [in combining the references]. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” See MPEP § 2143. Recently, the Supreme Court elaborated, at pages 13-14 of *KSR*, it will be necessary for [the Office] to look at interrelated teachings of multiple [prior art references]; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by [one of] ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the [patent application].” *KSR v. Teleflex*, 127 S. Ct. 1727 (2007).

Claims 1, 2, and 4-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Number 6,075,518 to Pruchniak (hereinafter the “Pruchniak reference”) in view of Japan Patent Number JP 2000-200147 to Naoyuki (hereinafter the “Naoyuki reference”). As the asserted combination of references fails to teach or suggest all of the limitations set forth in the rejected claims, Applicants respectfully traverses the rejection, as hereinafter set forth.

Independent claim 1 is directed to an input device for scrolling an image relative to an image display screen along perpendicular axes. The input device comprising a housing having at least one opening; a scroll wheel assembly provided within said housing, said scroll wheel assembly including a rotatable member that is rotatable about a first axis extending within said housing and slideably movable about a second axis within said opening, said first axis and

said second axis being perpendicular to each other. The input device additionally comprising a movement sensing system configured to sense rotational movement of said rotatable member about said first axis for scrolling the image in a first scrolling direction; a plurality of sensors for detecting tensile extension force to the sensors and the force responsive to, the sliding movement of said rotatable member about the second axis for scrolling the image in a second scrolling direction perpendicular to the first scrolling direction, the sensors resilient extensible; wherein the image is operable to scroll in the second direction responsive to the detected extension force.

The Pruchniak reference discloses a pointing device with a pivotally mounted support arm, that when tilted, the support arm contacts micro switches to make a selection. *See Pruchniak reference* at col. 2, lines 9-27. The Naoyuki reference discloses an input device that utilizes pressure applied to an electrical potential measuring means that determines the difference in the electrical potential to determine the amount of pressure applied to the input device. *See generally Naoyuki reference* at ¶ [0024]. The Pruchniak reference alone or in combination with the Naoyuki reference fails to teach or suggest each and every limitation of the invention recited in independent claim 1 for at least the following reasons.

The Pruchniak reference fails to teach a plurality of sensors for detecting tensile *extension* force to the sensors. Instead, the Pruchniak reference discloses tilting the support arm to cause actuating members, of the support arm, to *contact* the micro switches. *See Pruchniak reference* at col. 2, lines 25-27. Implying that the micro switches are not in contact with the support arm until the tilting of the support arm causes the support arm to come into contact with the micro switch. *See Pruchniak reference* at FIG. 1, switch 34 and actuating member 36. The Pruchniak reference therefore requires the control arm to be tilted before the sensors are activated by a contact between the control arm and the sensor. This contact between the control arm and the sensor creates a compressive force that activates the sensor. It is respectfully

submitted that a tensile extension force, as recited in independent claim 1, is not taught or suggested by the compressive force of the Pruchniak reference.

The Naoyuki reference teaches away from using a mechanical member as a means of providing user input. *See generally Naoyuki reference* at ¶[0019]. Instead, the Naoyuki reference teaches using an electrical potential sensor to determine the amount of pressure exerted on the sensor to indicate the user's input. The use of pressure on the electrical sensor overcomes the problematic sense of numbness and pain caused by using a stick or wheel. *See generally Naoyuki reference* at ¶[0019], [0014] and [0027].

Accordingly, it is respectfully submitted that the Pruchniak reference as modified by the Naoyuki reference does not teach or suggest "a plurality of sensors for detecting tensile *extension* force to the sensors" as recited in independent claim 1. Thus, Applicant respectfully submits that the Pruchniak and Naoyuki references, either alone or in combination, fail to teach or suggest all of the limitations of independent claim 1. Therefore, a *prima facie*, case of obviousness has not been established for independent claim 1 and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection thereof.

With reference to claim 2 which depends directly from independent claim 1, the input device of claim 1 is recited wherein said rotatable member is "*laterally* movable along said first axis within said opening." (emphasis added). The Office cites Column 4, lines 49-65 of the Pruchniak reference that describes the support arm being tilted in the direction selected by the user and one of the actuating members actuates one of the micro switches. *See generally Pruchniak reference* at col. 4, lines 58-63. It is respectfully submitted that the support arm of the Pruchniak reference is pivoted/tilted along a second axis (Fulcrum 22 of FIG. 1) as opposed to a first axis (Axis 54 of FIG. 2). *See generally Pruchniak reference* at FIG. 1 and FIG. 2. The tilting of the support arm does not teach or suggest lateral movement along a first axis, instead,

the support arm is pivoting along a second axis. The only movement disclosed along a first axis in the rotational movement of the rotating member. *See generally Pruchniak reference* at col. 3, lines 49-56. Therefore, it is respectfully submitted that a rotatable member that is laterally moveable along a first axis, as recited in dependent claim 2, is not taught or suggested by either the rotational movement of the rotational member along a first axis or a pivotal movement of the rotational member along a second axis of the Pruchniak reference.

Thus, Applicant respectfully submit that the Pruchniak reference and the Naoyuki reference, either alone or in combination, fail to teach or suggest all of the limitations of dependent claim 2 for at least the above cited reasons. Therefore a *prima facie* case of obviousness has not been established for these claims and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection thereof.

Each of claim 4-8 depends, either directly or indirectly, from independent claim 1. Thus, Applicant respectfully submit that the Pruchniak reference and the Naoyuki reference, either alone or in combination, fail to teach or suggest all of the limitations of dependent claims 4-8 for at least the above cited reasons. Therefore a *prima facie* case of obviousness has not been established for these claims and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection thereof.

With reference to independent claim 9, as amended, recites a method of scrolling an image relative to a display screen using an input device having a housing and a member that is rotatable and slidable relative to the housing. The method comprising receiving lateral pressure input for laterally moving the rotatable member in the direction of one side or another side of the rotatable member, wherein that direction is substantially perpendicular to a plane in which said member is rotatable, sensing at least one of the first tensile force and a second tensile force based

on the lateral pressure applied to the rotatable member, the second tensile force being greater than the first tensile force, and scrolling the image on the display screen in an approximately horizontal direction on the display screen, wherein the scrolling is at a first rate responsive to sensing the first tensile force and at a second rate responsive to sensing the second tensile force, the first rate being less than the second rate.

It is respectfully submitted that the Pruchniak reference fails to teach or suggest receiving a *lateral pressure input for laterally moving the rotatable member* in a plane substantially perpendicular to a plane in which said member is rotatable.

As previously discussed, the Pruchniak discloses a user tilting a control arm about a fulcrum point. *See generally Pruchniak reference* at col. 4, lines 58-65, FIG. 1. The titling of the control arm is not a lateral movement of the control arm in a plane substantially perpendicular to the plane that the rotatable member is rotatable. Instead, the control arm is moveable in a arc centered off of the fulcrum. *See generally Pruchniak* at FIG. 1, Fulcrum 22 (and associated directional arrows above fulcrum 22). The force applied by a user of the Pruchniak reference causes a tilting of the control arm, not a lateral movement in a plane.

Accordingly, it is respectfully submitted that the Pruchniak reference as modified by the Naoyuki reference does not teach or suggest “receiving a *lateral pressure input for laterally moving the rotatable member* in a plane substantially perpendicular to a plane in which said member is rotatable” as recited in independent claim 9. Thus, Applicant respectfully submits that the Pruchniak and Naoyuki references, either alone or in combination, fail to teach or suggest all of the limitations of independent claim 9. Therefore, a *prima facie*, case of obviousness has not been established for independent claim 9 and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection thereof.

Each of claim 10-12 depends, either directly or indirectly, from independent claim 9. Thus, Applicant respectfully submit that the Pruchniak reference and the Naoyuki reference, either alone or in combination, fail to teach or suggest all of the limitations of dependent claims 10-12 for at least the above cited reasons. Therefore a *prima facie* case of obviousness has not been established for these claims and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection thereof.

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,555,768 to Deruginsky et al. (hereinafter the “Deruginsky reference”) in view of the Naoyuki reference and U.S. Patent Number 6,016,110 to Takinami (hereinafter the “Takinami reference”). Additionally, claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruchniak in view of Naoyuki and Takinami.

The Deruginsky reference discloses a roller key assembly that includes switches that are activated by applying a force perpendicular to the axis of the roller member. *See generally Deruginsky reference* at col. 5, lines 47-53; FIG. 1. The Takinami reference discloses a scroll speed adjustment that depends on the time of scrolling. *See generally Takinami reference* at Abstract.

Referring to independent claim 17, as amended, recites a peripheral electronic input device for scrolling an image across a display screen in perpendicular directions. The input device comprising a housing; a scroll wheel assembly, said scroll wheel assembly including a rotatable member, that is rotatable in a first plane, and the rotatable member that is laterally movable in the direction of one side or another side of the rotatable member, wherein the lateral movement is relative to said housing in a second plane substantially perpendicular to the first plane, and a sensor positioned within said housing for sensing a period of time of lateral displacement of the rotatable member based on a tensile force applied to the sensor; and a

sensing system coupled to said sensor, said sensing system being configured to generate a signal to scroll the image across the display screen at a first speed if the period of time is less than or equal to a predetermined period of time, otherwise scrolling the image at a second speed, the second speed being greater than the first speed.

It is respectfully submitted that the Deruginsky reference, the Pruchniak reference, the Naoyuki reference, and the Takinami reference, either alone or in combination fails to teach or suggest, at least, a rotatable member that is laterally movable relative to a housing in a second plane substantially perpendicular to the plane the rotatable member is rotated. In particular, the Deruginsky reference discloses a force applied perpendicular to the axis upon which the rotating member rotates. *See Deruginsky reference* at col. 5, lines 47-53; FIG. 1. This force perpendicular to the axis of rotation does not provide a lateral movement that is substantially parallel to the axis of the rotating member.

As previously discussed, the tilting force applied to the support arm of the Pruchniak reference does not provide for the lateral movement of the rotating member in a plane substantially perpendicular to the plan in which the rotating member rotates. Instead, the tilting force causes the supporting arm to follow an arc with the center at a fulcrum point. *See generally Pruchniak reference* at FIG. 1. The motion of the supporting arm is not substantially in a plane perpendicular to the plane of rotation of the rotating member. Additionally, the Naoyuki reference fails to disclose a rotatable member that is laterally moveable relative to a housing in a second plane substantially perpendicular to the plane the rotatable member is rotated. Instead, the Naoyuki reference discloses an electrical potential switch that measures the amount of pressure applied by the user. *See Naoyuki reference* at ¶[0022]. Additionally, the Naoyuki reference discloses a stick that may be leaned by the force of a user's finger. *See Naoyuki reference* at FIG. 5. The stick pivots about a fulcrum point as indicated by arcing

reference arrows 210c and 210d. *See Naoyuki reference* at FIG. 5C. Therefore, it is respectfully submitted that the Naoyuki reference fails to teach or suggest a scroll wheel assembly, said scroll wheel assembly including a rotatable member, that is rotatable in a first plane, and the rotatable member is laterally movable relative to a housing in a second plane substantially perpendicular to the first plane.

Accordingly, it is respectfully submitted that the Deruginsky reference, the Pruchniak reference, the Naoyuki reference, and the Takinami reference, either alone or in combination fails to teach or suggest an input device comprising a housing; a scroll wheel assembly, said scroll wheel assembly including a rotatable member, that is rotatable in a first plane, and *the rotatable member is laterally movable relative to said housing in a second plane substantially perpendicular to the first plane*, and a sensor positioned within said housing for sensing a period of time of lateral displacement of the rotatable member based on a tensile force applied to the sensor; and a sensing system coupled to said sensor, said sensing system being configured to generate a signal to scroll the image across the display screen at a first speed if the period of time is less than or equal to a predetermined period of time, otherwise scrolling the image at a second speed, the second speed being greater than the first speed. Thus, Applicant respectfully submit that the Deruginsky reference, the Pruchniak reference, the Naoyuki reference, and the Takinami reference, either alone or in combination fails to teach or suggest all of the limitations of independent claim 17. Therefore, a *prima facie*, case of obviousness has not been established for independent claim 17 and, accordingly, Applicant respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection thereof.

Each of claim 18-20 depends, either directly or indirectly, from independent claim 17. Thus, Applicant respectfully submit that the Pruchniak reference and the Naoyuki reference, either alone or in combination, fail to teach or suggest all of the limitations of dependent claims

18-20 for at least the above cited reasons. Therefore a *prima facie* case of obviousness has not been established for these claims and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection thereof.

Dependent claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Pruchniak reference in view of Naoyuki reference and the Deruginsky reference. As discussed with respect to independent claim 1, from which dependent claim 3 depends, that a tensile extension force, as recited in independent claim 1, is not taught or suggested by the compressive force of the Pruchniak reference. It is respectfully submitted that the Deruginsky reference fails to cure the deficiencies of the Pruchniak reference viewed in light of the Naoyuki reference.

Thus, Applicant respectfully submit that the Pruchniak reference, the Naoyuki reference, and the Deruginsky reference, either alone or in combination, fail to teach or suggest all of the limitations of dependent claim 3 for at least the above cited reasons. Therefore a *prima facie* case of obviousness has not been established for these claims and, accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection thereof.

CONCLUSION

For at least the reasons stated above, claims 1-12, 17-20 are now in condition for allowance. Applicants respectfully request withdrawal of the pending rejections and allowance of the claims. If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned – 816-474-6550 or cwfisher@shb.com (such communication via email is herein expressly granted) – to resolve the same. It is believed that no fee is due, however, the Commissioner is hereby authorized to charge any amount required to Deposit Account No. 19-2112.

Respectfully submitted,

/Cory W. Fisher/

Cory W. Fisher
Reg. No. 59,366

CWF/tq
SHOOK, HARDY & BACON L.L.P.
2555 Grand Blvd.
Kansas City, MO 64108-2613
816-474-6550